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ABSTRACT

The ability to correctly answer reading comprehension test items, without having read the accompanying reading passage, was compared for third grade learning disabled students and their peers from a regular classroom. In the first experiment, fourteen multiple choice items were selected from the Stanford Achievement Test. No reading passages were provided, but the items were clustered according to their association with a particular passage. The learning disabled students answered correctly only slightly more than predicted by chance. Scores of the non-learning disabled group were significantly higher. In order to address the suggestion that the poorer performance of learning disabled students was caused by their lesser ability to read the test questions, a second experiment was conducted. A different sample of students included learning disabled and average third grade students. The examiner read each of the 14 test items aloud, and all students were given sufficient time to answer all items. The average students again had higher scores than the learning disabled group. The results suggested that learning disabled students may be less likely than their non-learning disabled peers to apply test-taking strategies to reading comprehension questions. (GDC)

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Reading Comprehension Tests

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Are Learning Disabled Students "Test-Wise?":
An Inquiry into Reading Comprehension Test Items

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Abstract

Previous research has indicated that students in many cases can answer reading comprehension test questions correctly without having read the accompanying passage. The present research compared, in two experiments, the ability of learning disabled (LD) students and more typical age peers to answer such reading comprehension questions presented independently of reading passages. In Experiment 1, LD students scored appreciably lower under conditions resembling standardized administration procedures. In Experiment 2, reading decoding ability was controlled for; however, the performance differential remained the same. Results suggested a relative deficiency on the part of LD students with respect to reasoning strategies and test-taking skills. In addition, the validity of some tests of "reading comprehension" was discussed.

Are Learning Disabled Students "Test-Wise?"

An Inquiry into Reading Comprehension Test Items

For many years, there has been some argument over what reading comprehension tests "really" measure (e.g., Thorndike, 1973-1974). The most commonly observed standardized reading comprehension item format consists of a passage and a number of associated multiple choice questions. Reading and understanding the passage is assumed to be a necessary pre-condition to correctly answering the questions. After examining the literature, however, one is forced to question the assumption of question dependence on the stimulus passage. Preston (1964) found that college students were able to answer reading comprehension items with the passages blacked out at a rate significantly above chance. Tuinman (1973-1974) administered five major tests to 9,451 elementary-level students under several conditions. Students in the no passage condition (relevant passage had been blacked out) on the average achieved only 30% fewer correct answers than subjects in the passage-in condition. Similar results were obtained by Pyrczak (1972, 1974, 1975, 1976) and Bickley, Weaver, and Ford (1968). A follow-up study of passage independence by Lifson, Scruggs, and Bennion (1984) revealed that passage-independent items are still quite common in elementary level achievement tests. College undergraduates were able to answer 75%, or almost 12 of 16 questions on the Stanford

Achievement Test, Level P-3, without reading the associated passages. This score is considerably above that expected by chance responding.

Scruggs, Bennion, and Lifson (in press) interviewed elementary age students regarding their responses on a reading comprehension test. They found that students often chose their answers based upon their own prior knowledge, rather than content of the reading passage. When students reported using such prior information, they answered correctly in over 60% of the cases.

Reading comprehension items which are independent of the associated passage can be answered on the basis of the following: (a) general knowledge, (b) interrelatedness of the questions on a particular passage, and (c) faulty item construction, i.e., keyed option is twice as long or more precisely stated (Pyrzczak, 1975). In the first two cases, the presence of enough information in the question stem to identify the topic is an important factor (e.g., "Which of the following statements is NOT true of penguins?"). Such a stem may render a question answerable in terms of information already available to the examinee and provide clues to the answers of related questions about the same passage that lack such information in the stem ("This passage is about: a) birds of South America, *b) birds of the Antarctic etc."). These clues which individuals apply to a testing situation to maximize

their scores correspond to Millman, Bishop, and Ebel's (1965) criteria of test-taking skills, or "test wiseness."

While test constructors may be able to point to high validity coefficients for their reading comprehension tests and subtests, an important question arises concerning whether all students are equally able to answer questions with the above mentioned characteristics without reading the passage. Are some groups of students at a relative advantage/disadvantage in ability to answer these questions without reading the passage? To answer this question, a group of students classified as learning disabled (LD) and a group of regular classroom students were administered a selection of multiple choice reading comprehension questions with the relevant passages removed. The conditions of this experiment were meant to resemble those of a normal testing situation--i.e., students were required to read the questions without assistance. This did not permit us to determine the extent to which any observed differences between the regular and LD students were due to reasoning or variations in general knowledge between the two groups or simply reflected a difference in reading ability. To address this issue, a second experiment was performed to see if similar differences could be found when word reading was controlled for.

Experiment 1

Method

Subjects and Materials

Subjects consisted of 67 regular classroom and resource room third grade students selected from several elementary schools in a western rural area. Of these subjects, 52 were regular classroom students and 15 were classified as LD by P.L. 94-142 and local criteria, which included a 40% discrepancy between actual and expected performance in two areas of academic functioning. The average grade equivalent of the total reading score of the non-LD students on the Comprehensive Test of Basic Skills (CTBS) was 3.4 ($SD=.8$), while the average CTBS total reading score for the LD students was 2.1 ($SD=.5$).

Fourteen multiple choice reading comprehension questions without the accompanying passages were selected for this task. Items were drawn from the Stanford Achievement Test, Level P-3, Form E (1982). Items had been chosen to represent questions thought by the author to be answerable in terms of: (a) the general knowledge of the test taker, and (b) the degree to which the interrelatedness of the items served as a cue to the answers. These items were taken from the Lifson et al. (1984) study, in which students' ability to answer these questions had been documented. The items were kept in clusters which belonged together in terms of association with a particular passage.

Procedure

Treatment was administered in regular instructional groupings. Materials were passed out and all students were told that they were about to take a reading test for which they would not be shown the accompanying reading passages, but that they should try their best to answer all questions. No time limit was imposed upon the task.

Results

The regular classroom group answered correctly approximately 55% of the questions, for mean score of 7.8 (SD=1.96). This score was significantly above a chance score of 3.5 ($t(102) = 11.27$, $p < .001$). In contrast, the LD students answered correctly only 35% of the questions, for a mean score of 4.9, only slightly higher than chance ($t(28) = 1.77$, ns). The obtained score of the non-LD group was significantly higher than the LD group ($t(65) = 4.91$, $p < .001$).

Discussion

The present findings suggest that regular classroom students are able to recognize and make use of cues in testing situations in order to increase their scores, even when reading passages are deleted, and "reading comprehension" supposedly cannot be measured. Apparently, LD students are not able to benefit equally from these cues. Since neither group should have scored above chance on a reading comprehension test with the reading passages

deleted, it is possible that a certain amount of bias exists against children with learning disabilities on some standardized tests of reading comprehension. Students in regular classes when unable to read or otherwise obtain meaning from reading passages are still able to answer correctly comprehension questions. Students with learning disabilities, however, do not seem to have these skills, and are thereby punished twice for a reading handicap: Once for being less able to read and comprehend the passage, and a second time for being unable to "second guess" test questions, as their nonhandicapped peers are apparently able to do.

One possible explanation for this discrepancy between LD and regular classroom students is that LD students are simply less able to read (decode) the questions, and for that reason are less able to outguess the test. That is, LD students are less deficient in "test taking skills" than they are in reading ability. In order to address this question, a second experiment was designed, in which ability to read would be controlled for. Although the conditions in this experiment could not parallel those of standardized test procedures, they did allow for an assessment of the extent to which differential scores are attributable to generally lower reading skills.

Experiment 2

Method

Subjects and Materials

The 42 subjects who participated in this investigation were different students drawn from the same population as those of Experiment 1, and consisted of 27 regular classroom third grade students and 15 third grade children classified as LD by P.L. 94-142 and local district criteria. Mean grade equivalent for the non-LD group (CTBS total reading) was 3.6 (SD=.9), and 1.9 (SD=.4) for the non-LD group. Materials were 14 items drawn from the Stanford Achievement Test, level P3, Form F, and were chosen on the same basis as those used in Experiment 1. Pages of the test were again left intact with questions left in the original order and the passages themselves blacked out during the copying process.

Procedure

Students were informed by their teacher that they were about to take a reading test without reading the corresponding passages. They were told to listen while the teacher read each item, and then answer the items. All students were given sufficient time to answer all questions.

Results and Discussion

The students in regular classrooms answered correctly 65% of the fourteen items, for a mean score of 9.14 (SD=1.8). The LD

students, on the other hand, answered correctly only 45% of the items, for a mean score of 6.33 ($SD=1.8$). Although both obtained scores are well above chance, ($t(52) = 12.02$, and $t(28) = 4.325$, $ps < .001$, for regular classroom and LD students, respectively), the regular classroom group maintained its advantage over the LD students, $t(40)=4.87$, $p < .001$. The results suggest that learning disabled students may be less likely to apply test-taking strategies to reading comprehension questions to a degree of efficiency similar to their non-LD counterparts.

General Discussion

In Experiment 1, regular third grade classroom students were seen consistently to outscore their LD counterparts on a test of reading comprehension questions with corresponding passages deleted, and administered under conditions resembling standardized testing procedures. In Experiment 2, regular class third graders again outscored LD students, under conditions for which reading ability was controlled. The ability of third grade children in these cases to score 55% and 65% correctly on questions which refer to non-existent passages seems remarkable, and brings into question the issue of what some tests of "reading comprehension" are really measuring. Such passage independent items have been thought to assess test-taking skills and in fact have been used as measures of "test-wiseness" (e.g., Derby, 1978). Although it is suggested that differences in the use of test-taking strategies

(such as use of prior knowledge, deductive reasoning, and elimination of implausible options) were responsible for much of the observed performance differences, other explanations are possible. Factors such as oral language decoding ability, attentional deficits, and test anxiety may have played a part in inhibiting performance on the part of the LD students. The role of these other factors in LD test performance is currently being investigated by the present authors (Scruggs, Bennion, & Lifson, 1984; Taylor & Scruggs, 1983). Whatever such tests are seen to measure, however, it is clear that: (a) it is not "reading comprehension," and (b) children classified as LD are at an apparent disadvantage.

An argument can be made that these comparisons are of trivial importance, since in standardized test administration, passages are not deleted; that all children in fact have equal access to passages which contain answers to reading comprehension questions. Although this argument has a certain face validity, some problems remain. First, since non-LD students can score so high on such items without reading the passages, the extent to which scores are a direct measure of "reading comprehension" seems uncertain. Second, since nearly all such tests are timed, students with incomplete understanding of relevant passages but possessing an ability to "outguess" test questions under time constraints, clearly are at an advantage with respect to students not

possessing such an ability. In this case, differences in scores on reading comprehension tests may in fact reflect in part a bias toward students with superior ability to respond to specific cues in the test-taking situation. As has been seen in the present experiments, LD students may well find themselves on the negative side of any such bias.

Two steps may be taken to help alleviate this potential source of bias. First, achievement tests should be revised so that reading comprehension tests directly assess comprehension of the provided passage. In fact, an informal review by the present authors of the major achievement tests indicates that many achievement test questions appear to be much less "passage independent" since the work of Tuinman (1973-1974) and others of a decade ago. Second, it seems possible that at least some of these "test-taking skills" can be trained, and that this training may do much to correct this apparent disadvantage. The authors are at present investigating the effectiveness of such training (Taylor & Scruggs, 1983). Although such improved scores on tests may not necessarily reflect increased achievement, these scores could reflect more accurately achievement gains students have made, as evaluated by standardized achievement tests.

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Footnote

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